WHAT IS CLAIMED IS:

1. A method for rendering shadows comprising:

determining visibility function of depth with respect to a given light source and object scene;

storing said visibility function in a map location of a map; and

rendering a geometric element for display, said rendering comprising:

transforming said geometric element to yield one or more map locations and depths;

evaluating said visibility function at said map locations and depths to yield a fractional light contribution from said light source.

2. The method of claim 1, wherein said geometric element is a surface.

3. The method of claim 1, wherein said geometric element is a volumetric primitive.

4. The method of claim 1, wherein said transforming said geometric element comprises projecting one or more sample points of said map locations from the camera's perspective to the coordinate system associated with said light source.

5. The method of claim 1, further comprising the step of compressing said visibility function.

6. The method of claim 1, wherein said storing said visibility function comprises storing a list of vertices.

7. The method of claim 6, wherein said evaluating said visibility function comprises performing a binary search of said list of vertices.

8. The method of claim 6, wherein said evaluating said visibility function comprises performing a linear search of said list of vertices.

9. The method of claim 8, wherein said performing a linear search comprises utilizing a pointer to initiate said search from one of said list of vertices most recently accessed in a prior search.

10. The method of claim 1, further comprising generating a plurality of resolutions of said map by averaging visibility functions of a plurality of adjacent map locations.

11. The method of claim 10, wherein said generating a plurality of resolutions further comprises compressing the result of said averaging.

12. The method of claim 1, further comprising storing a tile of map locations in a cache.

13. The method of claim 12, further comprising resizing a cache line of said cache in accordance with a tile size of said tile of map locations.

14. The method of claim 1, wherein said visibility function stores light attenuation information from a non point (i.e., area) light source.

15. A computer program product comprising:

a computer readable medium having computer program code embodied therein for rendering shadows, said computer program code configured to cause a processor to:

determine a visibility function of depth with respect to a given light source and object scene;

store said visibility function in a map location of a map; and

render a geometric element for display, wherein said render comprises:

transforming said geometric element to yield one or more map locations and depths;

evaluating said visibility function at said map locations and depths to yield a fractional light contribution from said light source.